Glossary of Some Maritime Construction Terms

Source Abbreviations:

AF: Dictionnaire de l'Académie Française *(Dictionary of the French Academy)*

DM: Dictionnaire universel de la marine – Ch. de Bussy – 1862 *(Universal Dictionary of the Navy)*

E-Univ.: Encyclopédie universelle (*Universal encyclopedia)*

CDM: Lexique du "Canal du midi" *(Glossary of the "Canal du midi")* (https://www.canaldumidi.com/Geographie/DicoTech.php)

Littré: Dictionnaire de la langue française de E. *Littré* – 1874 *(Dictionary of the French language)*

CdTM (1 or 2): Cours de travaux maritimes - École Nationale des ponts et chaussé - Baron Quinette de Rochemon - 1900 (T. 1) / 1901 (T. 2) *(Maritime works course - National School of Bridges and roads)*

ФРУС: Французско-русский универсальный словарь *(French-Russian Universal Dictionary)*

БФРС: Большой французско-русский и русско-французский словарь *(Large French-Russian and Russian-French Dictionary)*

ТСС: Терминологический словарь по строительству на 12 языках *(Terminological Dictionary of Construction in 12 Languages - All-Russian Scientific Research Organization)* (ВНИИИС Госстроя СССР – 1986)

Мс: Морской словарь в 2 томах государственное военно-морское издательство нквмф союза ССР москва 1941 ленинград *(Naval Dictionary in 2 volumes, State Naval Publishing House of the People's Commissariat of the Navy of the USSR, Moscow 1941, Leningrad)*

Др: Other...

Anguilles

DM(*) – (Ways; bilge ways.) Long, strong pieces of wood that serve as the base for a ship's cradle. Those that carry the ship to sea are called *coittes courantes* (moving ways); those that only keep it in a given direction are called *coittes mortes* (stationary ways).

Mc – steep, high river bank; quay.

Arquer

DM – (To become broken-backed, or cambered.) To curve into an arch; to take on an arch (see this word). A ship is *arqué* or appears so when its ends are or seem to be lowered relative to its middle. — A ship becomes arqué as soon as it is launched, because the surrounding water does not support it in all its parts according to their particular weight, or because the water displacement is not in this ratio between its ends and its middle part. — At sea, a ship beaten by waves, stressed by its rigging, takes on a new curve; its greatest deflection or the most noticeable alteration of its

(*) All English terms in parentheses in the dictionary are those of the original editions

original contours usually corresponds to the region of the *dogue d'amure*. — A arquée keel (cambered heel) is one that is no longer straight; an *arqué* deck (cambered deck) is one that has lost its initial sheer; an *arqué* ship (broken-backed ship) is one whose longitudinal curvature is no longer regular and uniform.

Atterrissement (sédimentation)

AF – Derived from the root of the present participle of *s'atterrir* in the old sense of "to fill (itself) with earth". Deposit formed by alluvium. Atterrissements always form in the concave part of a meander.

ФРУС – accumulation of alluvium, alluvial deposit, alluvial land, deposition of alluvium, silting, process of alluvium accumulation, process of formation of alluvial deposits by a river.

БФРС – sediment formation (geol. formation of sedimentary rocks).

Avant-port

DM – (Outer port.) Sea area preceding a port; it can provide shelter for vessels.

AF – 1. Advanced part of a port facility, providing access to the various basins of the port proper and the inner harbor.

TCC – Outer part of a port, protected from waves by natural shelters or protective structures and adapted for anchoring, loading and unloading ships.

Avant-Cale

DM – (Launch.) Seaward extension of the floor or slipway on which a vessel is built while under construction. It serves as a bridge for a vessel to go from its building slipway to the sea.

Mc – Launching foundation, part of the slipway device which receives, via the sliding ways, the weight of the ship to be launched. A distinction is made between the launching foundation above water and that below water. The above-water foundation is the above-water part of the slipway on which the launching ways are laid out; these ways are intended for the movement of the launching sliding ways, or cradle, on which the ship is placed before launching. The underwater foundation serves to establish launching ways underwater which are the continuation of the ways installed on the above-water foundation. The installation of such underwater ways is necessary so that the launched ship can already float before leaving the underwater foundation. The launching foundation, like the slipway, has a certain slope, varying according to the size of the ship; to allow this slope to be modified, a temporary wooden foundation is built over the permanent foundation.

Bajoyer

AF – 18th century. Derived from *joue* (cheek), by blending *jouyer* and *bajoue*. Public works. Masonry revetment along an embankment, watercourse, canal, and especially a lock. The width of a lock between two *bajoyers*.

CDM – The masonry walls of the lock chamber, parallel or slightly oval, also called quay walls.

ФРУС – 1) dry dock wall, abutment (on a river), side wall of a lock chamber, retaining wall. 2) retaining wall, wall (e.g., of a lock).

Bassin

DM – 1. Sheltered place, in certain ports, where vessels are safe from wind and heavy seas (small harbour). 2° Stone enclosure found in military shipyards into which sea water is introduced (dock, or basin of a dock) through gates large enough to allow passage of vessels placed there for repairs (see *forme*).

Littré – Part of a port where vessels are afloat and sheltered from the agitation of the sea.

Mc – Enclosed body of water. For navigation purposes, special basins are laid out in ports and roadsteads for fitting out, handling, and repairing ships. In ports with large tides, special tidal basins are laid out (Tidal basin). These basins are separated from the sea either by special gates or by lock chambers; the water level is always maintained at the height of mean tide. With gates, the basin can only be opened for the time (1 to 2 hours) when the sea level is higher than the constant level of the basin; with locks, the basin operates continuously.

Bassin à flot

AF – Enclosure communicating with the sea and closed by a lock so that the water level remains constant and is not subject to the movement of the tide.

E-Univ. – Basin connected to the outer harbor by a lock and in which the water level is maintained close to that of high tide.

Mc – Floating dock — floating structure intended for lifting ships and consisting of a pontoon, on the sides of which rise side walls (towers), solidly connected to the pontoon. The floating dock is divided by watertight bulkheads into compartments which, when the dock is submerged, fill with water by gravity through special valves operated by rods from the upper deck of the walls. When the dock is raised, water is pumped out by pumps located in the lower part of the pontoon and driven by electric motors or steam engines placed on the upper deck of the walls. Self-elevating floating dock — floating dock composed of several pontoons connected on each side by common continuous walls. The pontoons of the dock can be separated from the towers for repair and painting and be raised in turn by the dock itself, supported by the other pontoons.

Bassin de chasse (retenue)

See *Chasse*

Bassin de retenue

Littré – Space between two locks, where water is retained.

Bassins de radoub

DM – 2° Stone enclosure found in military shipyards into which sea water is introduced (dock, or basin of a dock) through gates large enough to allow passage of vessels placed there for repairs (see *forme*).

AF – Watertight pit that can be drained to carry out maintenance and repair of ships. Careening dock, building dock.

Mc – Dry dock — dock built on shore in the ground, whose bottom lies below the level of the lowest water so that the corresponding ship can be floated in. The bottom, side walls, and rear wall of the dock are lined with stone and concrete blocks, while the front wall is replaced by a movable closure device at the dock entrance. The closure devices are of two systems: either sliding gates, or a floating closure device — a caisson (gate-caisson or *bateau-porte*). In the middle of the dock, along its bottom, a protruding track is laid out to receive the keel blocks. Near the dry dock, a special room is laid out for pumps used to evacuate water from the dock.

Bateau-porte

DM – *Bateaux-portes* close the opening of basins in ports.

CdTM 2 – A bateau-porte is a removable watertight screen, capable of floating to clear the passage it closes, and which can be sunk in place by the introduction of water ballast; the lower and lateral surfaces then bear on a sill and on two rabbets located in the same plane. The bateau-porte is brought into the lock and beached before the dock is drained; it is raised after filling, the water ballast used to sink it having been previously removed.

Mc – (Ponton dock-gate) — closure installed at the entrance (gate) of a dry dock to isolate the interior part of the latter from sea or river water. The caisson is a steel watertight box, having an internal platform and divided into compartments.

Ber or berceau

DM – (Cradle.) A kind of bed made of ropes and strong framing pieces, on which a vessel is rested, when, after having been built on shore on an inclined building site, it is intended to be launched. The cradle embraces a large part of the hull; it slides towards the sea, as soon as it is freed from everything that might hold it back, carrying with it the vessel which abandons it when it succeeds in finding a new support in the water. A cradle has as its base two *coittes*, on which are erected uprights called *colombiers*, held by ropes passing under the ship's keel. Those in the middle support their notched heads under a strong, long piece of wood called a *ventrière*, which serves as a half-belt for the broadest contours of the lower part of the hull.

БФРС – maritime: launching cradle.

Béton en sacs

CdTM 1: "Bag concrete is preferable to concrete poured directly under water; washing away is less to be feared, and the often considerable weight of the mass falling at once means that the bags mold themselves to the ground or to each other. Their use is well justified in some special cases, notably for leveling the roughness of rocky ground or the top of riprap, for providing foundations for relatively unimportant structures, or for forming protective enclosures. It has sometimes been used in France under specific conditions, but care has been taken not to generalize its use to the point of making it one of the constituent elements of important works. Since the bags are not filled so that

they mold onto each other, it often happens, when they are large, that the concrete shifts and moves towards the ends; these, consequently, sometimes tear and leave the concrete exposed. Compactness is also not assured; the welding together of bags immersed at different times is not certain, given, in particular, the difficulty of cleaning the surface of the bags laid earliest."

Mémoire sur les travaux à la mer (Thesis on the work at the sea) – L. V. Poirel – 1841:
"This method of manufacturing artificial blocks was arrived at by a process used by the Italians, when they want to repair scour holes occurring in masonry under water. This process consists of filling bags similar to the sandbags used in fortification with concrete, to be placed on top of each other in the opening to be closed. Based on this idea, they filled a bag much larger than the sandbags with concrete and threw it into the sea during a storm; and after a few days, when the sea was calm, they found this block very hard and very resistant."
[*caisses-sac - bag boxes (ibid)*] "The walls of these boxes are formed by a lattice of beams, covered internally with a double course of planks with crossed joints forming a shell. The lower part is cut out approximately according to the profile of the ground on which they are to rest. They are lined inside with tarred canvas, fixed around their entire perimeter and forming a bag. This canvas, nailed to the framework, extends over the total height of the box up to above the water level. The four panels of the box are assembled by hinged iron brackets, so that they can be easily dismantled. They are removed after ten to twelve days; and to use them again, it suffices, either by cutting them or lengthening them, to shape them roughly according to the shape of the ground. Once assembled, a canvas is fitted to them which must have sufficient fullness to conform to all the sinuosities of the bottom it covers. The box thus forms a real bag, whose sides are reinforced by wooden panels over which the canvas is stretched and fixed. The mass of concrete filling it can therefore mold itself perfectly to the ground and bond with it through the very roughness it presents; whereas with flat-bottomed boxes generally used for founding underwater structures without dewatering, one must strive to eliminate ground irregularities by leveling it to an approximately even surface, a difficult operation that can never be more than imperfectly successful."

Bigues

DM – (Sheers.) 1° Long, strong fir pieces which, in a masting machine, support the tackle used to raise a mast. 2° Tall uprights erected around a ship under construction, carrying pulleys at their heads which facilitate the raising and arrangement of the large component pieces of the vessel. 3° Strong pieces of wood serving as levers to incline a small vessel onto one of its sides. 4° Two pieces of wood joined at one of their ends to form a kind of sheer legs, with which heavy loads are lifted and loading or unloading of a vessel is facilitated.
БФРС – lifting, assembly tripod; jib crane; (lifting) crane, (cargo) boom.

Bordages

DM – (Plank.) Name given to planks of varying thickness used either to cover the entire outer surface of a ship's hull, or to form the decks or floors distributed inside vessels. Some have particular names, such as *préceintes*, *carreau*, *ribord*, *lisses de rabattue*, *hiloires*, *bordages de fonds* (plank of the floor), *bordages des gaillards et de la dunette*, etc. — The word *bordage* sometimes expresses the action of planking a ship or applying planks in their place.

БФРС – planking board.

Bracon

E-Univ. – Reinforcement piece, arranged diagonally between the foot of the hinge post and the top of the miter post of a lock gate.

ФРУС – 2) construction: diagonal tie, strut.

Brise-lames

AF – 19th century. Composed of *brise*, verb form of *briser* (to break), and *lames* (waves). Structure built at the entrance of a port or roadstead to protect them from waves coming from the open sea.

TCC – Breakwater — Hydraulic structure to protect the water area of roadstead berths, approaches to channels and locks, and coastal areas of the sea from waves.

Busc

AF – In a lock, a projection on the sill against which the lower part of the gates abuts.

Busqué (Porte, Poteau)

AF – Having a convex curvature.

Cadranure

E-Univ. – Wood defect characterized by cracks arranged like the hour lines of a dial (Forest. 1946). No more than cadranure can roulure be detected in the standing tree (*J. Cochet, Culture, aménagement et amélioration des bois*, 1963, p. 27).

Mc – star shake — cracks in standing trees, radiating from the pith and following the axis of the trunk; the harm of this defect depends on the size and direction of the cracks.

Cale

DM – 2° Building slip (building slip), extensive, inclined, artificial base on which a vessel rests during its construction; placed under a high roof, it is called a covered slipway; used as a base for vessels undergoing any repairs, it is called a careening slipway or repair slipway.

Cale de halage

AF – Repair device consisting of an inclined plane fitted with rails on which rolls a cradle, or *ber*, which supports the ship to be repaired.

See also *Avant-cale – Mc*

Chardonnets

Littré – 2° Term of bridge and road construction. Refers to the stones of locks bearing the rabbet in which the hinge posts turn.

E-Univ. – Vertical member of a carriage gate leaf which carries the ironwork by means of which pivoting occurs. Vertical part of the masonry of a lock head, against which the hinge post of a miter gate leaf rests when the latter is closed.

Chasse

AF – Artificial current created in a port to clear a channel of sands brought in by the tide. A *bassin de chasse* (flushing basin).

Littré – Flushing reservoir, a vast space closed by a lock, which is opened to the rising sea at high tides, and closed as soon as the sea begins to fall, to be reopened suddenly when it is completely low; the water, then rushing with great violence, flushes away the shingle or sands obstructing the entrance to ports.

Chenal (Canal)

DM – 1° Space in which the sea is constricted, between two continents, between two islands, or between an island and a continent: such as the English Channel, the Mozambique Channel, etc. A vessel entering a channel is said to *faire canal* or *donner dans le canal*. — 2° Similar space placed in a sea obstructed by reefs and offering vessels a safe and easy passage. In this case, *chenal* is also used.

AF – 1. Narrow passage, natural or artificial, allowing navigation between rocks, shoals, islands, or connecting a port to the open sea. Navigation channels. The port's entrance channel was marked by buoys.

Mc – (Maritime) canal — artificially created waterway according to predetermined underwater and surface dimensions, with a provided normal method of vessel movement; artificially deepened channel leading to the port through the coastal bar.

Coëttes (Coittes or Anguilles)

Misspelled, as the Dictionnaire universel de la marine uses the spelling *Coitte* (with a typo in the index, *Coite*). This may be due to an attempt at phonetic transcription of the Breton pronunciation of "oi", [ɔj] which would give [kɔjt] or [kwait].

See *Anguilles*

Colliers

AF – Circular band, most often metallic, used to fix a tube, a pipe, a cable, etc.

Contrefiche

AF – Piece arranged obliquely to prop up a wall, panel, or any other vertical element.

Др – Single-strut system — wooden bridge system in which the middle of each longitudinal beam or crossbeam is supported by two struts mortised into each other. *Термины российского архитектурного наследия (Terms of the Russian architectural heritage). Плужников В.И., 1995*

Crapaudines

AF – Vertical bearing serving as an abutment and ensuring the guidance of a rotating part.

БФРС – tech.: pivot bearing; thrust bearing; pivot, eye; stop (of a hinge).

Mc – Pivot bearing — (Foot step bearing) support part supporting a vertical shaft and receiving all the load acting along the shaft axis.

Déraser

AF – To level ground by lowering its level; to partially demolish a structure to bring it to the desired level.

Digue

AF – Structure which protects a port from the open sea swell. A lighthouse occupies the end of the digue.

Mc – Dam, sea-wall, dike — hydraulic structure in the form of an embankment serving to protect an area from flooding, to carry a road platform, or to regulate river flow.

Ebbe

DM – Synonym of *Jusant* (see this word).

AF – (Ébe) Maritime term, used in several provinces for the ebb of the sea.

БФРС – falling tide (in Normandy).

Écharpes (Lisses)

DM – *lisses de l'éperon* or *Écharpes*, or *Porte-vergues*, or *Herpes* (rails of the head), long curved pieces of wood, three on each side of the stem, extending from the *éperon* (cutwater) to various points of the ship's cheek, diverging from each other, and embracing the *poulaine* (head rails).

AF – Rope that is tied around a heavy load in order to move it.

Joinery – Piece of wood or iron, fixed diagonally, which serves to hold together the vertical planks of a panel. A diagonal brace.

Échouage

DM – Situation of a vessel which, not being surrounded by a sufficient depth of water to keep it afloat, necessarily rests on the seabed.

E-Univ. – Situation of a ship which intentionally touches the bottom and ceases to float. *Échouage au bassin* (dry-docking). *Échouage d'une barque sur la plage* (beaching of a boat). *Port d'échouage* (tidal port). Contact with the bottom by a stationary vessel due to a lowering of the water level. Place where a boat, a craft can be beached without danger.

Enrochement

AF – Heap of rocks thrown into a seabed, river, or shifting ground to serve as a foundation and prevent scour.

БФРС – stone bed; rubble filling; riprap.

ФРУС – stone fill.

Épaufrure

AF – Chip accidentally detached from a dressed stone, a marble block, a sculpture.

ФРУС – stone chipping.

Étale

DM – The sea is *étale* (high water; slack water), when it is in a stationary state, i.e., when the daily flood or ebb is finished.

Др – turn of the tide (zero current) — *Русско-французский географический словарь (Russian-French geographical dictionary)*.

Forme

DM – (Wet dock.) Space which, in the same basin, can receive several vessels.

AF – Beaching basin where boats are repaired. *Faire passer un navire en forme* (to put a ship into dock). *Forme de radoub* (repair dock) (also called *Bassin de radoub* or *Cale sèche*).

Mc – Wet dock — basin or series of communicating basins for vessel parking. At the entrance of the wet dock are gates or a floating caisson, connecting the basin to the sea or river during high water (tide) and closed during the ebb; thus, the water level in the wet dock is always kept constant, which offers considerable advantages, allowing deep-draft ocean-going vessels to access relatively shallow ports subject to tides. Wet docks are particularly widespread in England and the Netherlands.

Mc – Dock — special structure intended to receive ships for repair, inspection, or painting of their underwater part, as well as for parking in tidal ports. The dimensions of the dock depend on the dimensions of the ships for which it is intended. To dock a ship (To dock a ship). To enter the dock (To enter the dock). To come out of dock (To come out of dock).

Fourrures

DM – 3° pieces of wood (furrings) that carpenters apply to wooden pieces to reinforce them (*fourrure d'une vergue* - yard packing), or to repair defects they have in their contours;

БФРС – 5) maritime: packing, furring.

Gabare

DM – 2° flat, undecked boat (barge) which, on rivers or seacoasts, serves for transporting goods from one ship to another or from a ship to port. The masters of these boats are called *Gabariers* or *maîtres de gabares*; they sometimes engage in short-sea shipping.

Gélivure

AF – Crack or split in a trunk or branch, caused by frost.

Др – crack appearing along the fibers, often over the entire length of the trunk, during severe frosts. In spring, these cracks close and heal, but often reappear in winter. If this repeats several times, ridges form on the tree, in which rot can appear over time. *Технический железнодорожный словарь (Railway Technical Dictionary)*. 1941.

Guideau

E-Univ. – Dam made of inclined planks, to direct water flow. *Dresser des guideaux à l'entrée d'un port* (to set up guide piles at the entrance of a port).
ФРУС – guide pile.

Jetée

AF – Structure made of wood, stone, or other materials, built along the channel of a port or in a watercourse to break waves and direct currents.
Mc – Mole (Mole, jetty, dam) — protective structure protecting the port area from wave action. Can also serve for the installation of berths, handling equipment, and other devices. A signal light or lighthouse is installed at the seaward end of the mole.

Jusant

DM – (Ebb or ebb tide.) Daily movement of the sea, which physicists call reflux. If, during the flood (flood), the sea brings new waters to the shores and rises to a greater or lesser height above its natural level, conversely, during the ebb, it runs in the opposite direction. — When this movement of the sea is established, it is said there is *jusant* (the tide ebbs or falls); if it is lively and rapid, there is *grand* or *fort jusant* (main ebb); when this movement dies down, the *jusant* is *étale* or *est étalé* (slack water).

Lame

DM – Wave, roller, or more or less high mountain of water, which the wind produces, increases, and maintains on a sea whose surface it agitates. — A *grosse lame* (high sea) is high and wide at its base; a *lame longue* (long sea) has a base embracing a long space; a *lame courte*, a *mer courte* (short sea) refers to several low waves covering a small space. Waves that break (to unfurl) are those that strike each other. — A vessel which, being between two high waves, cannot receive the wind in its sails, is sheltered by the wave (becalmed in the trough of the sea). — A vessel *a la lame par le travers* (the sea strikes upon her broad-side), when it is directed against one or other of its flanks; it *fuit la lame* when it runs before the wind (to run away).

Mailletage

DM – 1° Action of *mailleter* a ship. 2° Product of this operation.

Mailleter

DM – (To sheath a ship's bottom with nails.) To cover the outer surface of a ship's hull with nails. These nails are distributed so that their heads, 6 to 8 lines wide (approx. 13.5 to 18 mm), are only 5 to 6 lines (approx. 11 to 13.5 mm) apart, and the rust that follows soon fills this interval, so that shipworms can no longer then sting and pierce the wall of a ship thus prepared.

Môle

AF – Masonry massif which protects the entrance to a port by obstructing waves coming from the open sea, or which divides a basin into docks to allow ships to berth.
See also *Jetée*.

Mortes eaux

DM – *Le mort de l'eau* or *le mort d'eau* (neap tide), or *eaux mortes*, indicate the time when tides are less considerable during a lunar month, i.e., the time of the moon's quadratures.

ФРУС – neap tide.

Musoir

AF – Inclined end of a jetty, a breakwater.

БФРС – pier head; mole point; end of a dam; lock head corner.

Port d'échouage

AF – Beaching place or, by metonymy, archaic, *échouage*, a place on a coast where a small boat can be beached without danger, such as a smooth beach, a sandy bottom.

Poteau busqué

CDM – Post of a lock gate leaf which abuts against that of the other leaf when closed.

ФРУС – miter post.

Poteau tourillon

CDM – Post forming the axis on which a lock gate leaf pivots.

ФРУС – hinge post.

Poulier

AF – Curved point of a coastal spit, which tends to block the entrance to an estuary.

ФРУС – shingle and sand bank, gravel and pebble shoal.

Quai

DM – (Quay.) Space along the sea or a river; it is often an embankment faced with stone, but always prepared in such a way as to facilitate both the approach of vessels, and their loading and unloading. A vessel is *à quai* when it is alongside a quay.

AF – Earth embankment, most often covered with a masonry facing, built along a coast or watercourse to prevent overflowing, retain shore land, and allow ships to berth.

Quadrature (marée de)

Mc – the smallest tide, when the Sun and Moon culminate one after the other after 6 hours, i.e., when they are in quadrature, and the tide-generating forces of the moon and sun act at right angles to each other and their total force is the smallest.

TCC – Neap tide — the weakest tide, when the Sun and Moon culminate one after the other with a 6-hour interval, i.e., at the first and last quarter of the Moon (quadratures). The weakest tide, when the Sun and Moon culminate one after the other with a 6-hour interval, i.e., when they are in quadrature, and the tide-generating forces of the Moon and Sun act at right angles to each other, their total force then being the weakest.

Rade

DM – (Road.) Expanse of shallow sea partly enclosed by more or less high land, and offering vessels anchorages sheltered from wind and waves.

Mc – Roadstead (Roadstead, road) — more or less extensive body of water in the vicinity of the shore, constituting a suitable anchorage for ships, protected from wind and wave action. Depending on the degree of protection against wind and waves, roadsteads are divided into open roadsteads and closed roadsteads. The latter, in the absence of natural shelter (a projecting cape, coastal island, or shoal), are created by means of protective structures: moles and breakwaters. The roadstead must have a depth not exceeding 40 m, with a suitable bottom capable of holding the anchor well (e.g., mud), and present no underwater dangers. A great advantage of the roadstead is its access from the sea, which is sufficiently wide and free from dangers, as well as the absence of obstacles to entering the roadstead in any weather, at any time, including at night. A roadstead having several entrances is preferable to a roadstead with a single entrance, mainly from a military point of view, not to mention the convenience of entering and leaving in different winds. Sometimes, cargo transfer operations between ships or ship bunkering are carried out afloat in the roadstead.

Rades foraines

DM – (open roads), roadsteads which are only partly enclosed by high land, and are openly exposed to several sea winds when they prevail.

Mc – (Outer harbour) — roadstead located outside the protected part of the port.

Radier

AF – Timber or masonry platform serving as a foundation for a structure exposed to water action or built on loose soil.

TCC – Apron — the assembly of parts of a spillway dam over which an open water flow passes, including the upstream apron, the spillway crest, the stilling basin, and the downstream apron.

Radoub

DM – (Repair.) More or less extensive repair made to a seagoing vessel.

AF – Maintenance and repair of a vessel's hull.

БФРС – repair of the underwater part of the ship; repair of masts; repair of sails.

Mc – Ship repair (Repair, repairing) — aims to restore worn or damaged parts of the hull, rigging, equipment, and machinery; this should also include the replacement of ship devices and machinery of obsolete types with more recent, technically more advanced samples (modernization). According to the size and nature of the work, ship repair is divided into: preventive, routine, major, and emergency repair.

Reflux

DM – See *Jusant*.

Roulure

AF – Wood defect presenting a circular crack between two adjacent rings of the trunk.

Mc – Ring shake — crack along the annual ring, sometimes affecting only part of the ring, sometimes the complete ring.

Syzygie

Littré – 1° Astronomical term. Positions of the sun and moon when these stars are in conjunction or opposition, i.e., at new and full moon.

Mc – Syzygy — position of the Moon when its longitude is either equal to the longitude of the Sun (conjunction), or differs from the latter by 180° (opposition); in the first case, new moon occurs, and in the second, full moon.

Tarets (vers)

AF – Small marine bivalve mollusk resembling a long worm which bores galleries in submerged wood.

Tourillon

AF – Tourillon - Cylindrical part serving as a rotation axis.

Littré – Cylinder movable in a bearing, by means of which any apparatus can receive a rotational movement; tourillons are always coupled in pairs, and they have the same axis which is horizontal.

Др – Journal, gudgeon, pivot — 1. Tenon, part of a shaft or axle which rests on a bearing and rotates in it. *Толковый словарь Ушакова (Ushakov's Explanatory Dictionary). Д.Н. Ушаков. 1935-1940*

Triqueballe

AF – Towed device used for transporting long and heavy loads, notably logs, consisting of a crossbar mounted on large-diameter wheels, under which the load is fixed.

БФРС – 1) cart for transporting logs, timber bogie, logcart.

Valet (de porte)

Littré – Counterweight which, hanging behind a door, makes it close without being touched. Iron bar serving as support for the door leaf.

Ventelles(*)

AF – Vantelles or *vanelles*: Small valve located on a lock gate.

Littré – ventelle: Opening made in the *ventellerie*.

Ventellerie: Term of bridge and road construction. Wood or masonry structure, intended to support a water head: one or more openings are made in it which are closed with valves.

Course on the construction of works establishing navigation on rivers and canals, taught at the École des ponts et chaussées from 1832 to 1841, by Mr. Minard: "The ventelles of gates are usually placed between the last two lower crosspieces; their distance from the posts depends on the best position they can have relative to the diagonal brace and the strut which obstruct their opening and hinder their mechanism. For this reason, their width varies from 0.60 m to 0.40 m; their height is the interval between the crosspieces. When they are in the angle of the miter post, the fluid jets from the two leaves collide immediately at their exit from the orifice, and the flow is somewhat impeded.

(*) The dictionary of the French Academy spells it with an a but all the courses taught at the École des Ponts et Chaussés, published, use the spelling "Ventelle", as Littré.

The ventelles are usually composed of small horizontal planks (fig. 318), assembled with tongues and grooves, and held by hinges and horseshoe-shaped iron fittings m m (fig. 306), ending in a rod pp used for operation. The planks slide in runners formed by two pieces of wood applied against small posts; these runners, projecting 0.12 m to 0.15 m from the plane of the gates, force the groove to be made deeper or recesses to be made in it. Iron runners are therefore often preferred, and sometimes even the ventelles are placed within the thickness of the gates to avoid any projection. Sometimes the ventelles are made of cast iron or sheet metal fixed on a wrought iron frame.

To operate the ventelles, iron or cast iron jacks are generally used."

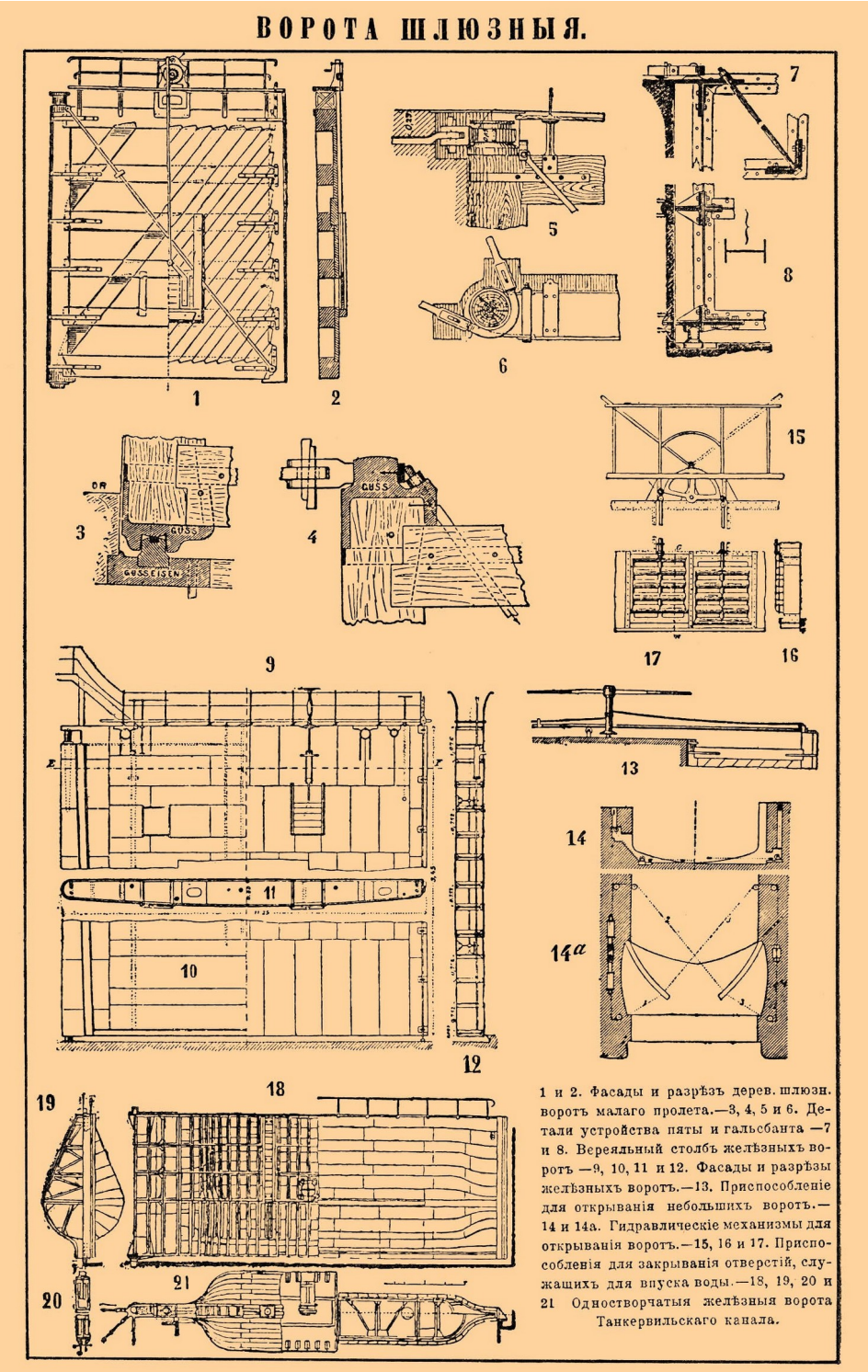
Vireveau (or virevau)

Littré – Maritime term. Horizontal capstan turning on two pivots, serving, on certain ships, to raise anchors and all heavy loads.

Vives eaux

DM – Eaux vives (spring tides) is the name for tides occurring at the time of syzygies.

БФРС – spring tide.



Lock Gates

1 and 2. Elevations and cross-sections of wooden lock gates for small spans.

3, 4, 5 and 6. Details of the pivoting (or bearing) device and the fixing strap.

7 and 8. Assembly post for iron gates.

9, 10, 11 and 12. Elevations and cross-sections of iron gates.

13. Opening device for small gates.

14 and 14a. Hydraulic mechanisms for gate opening.

15, 16 and 17. Closing devices for water inlet orifices.

18, 19, 20 and 21. Single-leaf iron gates of the Tancarville Canal.